

REMARKS

Applicants appreciate the Examiner's thorough examination of the present application as evidenced by the Office Action of January 5, 2005 (hereinafter "Office Action").

Applicants especially appreciate the allowance of Claims 1 - 24. Accordingly, the sole remaining issue for consideration is the patentability of Claims 25 and 26. To advance prosecution and to facilitate an early allowance of the present application, Applicants have amended Claims 25 and 26 along the lines of allowed independent Claim 14, for example, to clarify that the plurality of clock signals are synchronized based on error signals that are generated based on relative phase differences between ones of the plurality of clock signals. Accordingly, Applicants submit that all pending claims are in condition for allowance. Favorable reconsideration of all pending claims is respectfully requested for at least the reasons discussed hereafter.

Independent Claims 25 and 26 Are Patentable

Independent Claims 25 and 26 stand rejected under 35 U.S.C. §102(e) as being anticipated by U. S. Patent Application Publication No. US 2002/0031199 to Rolston et al. (hereinafter "Rolston"). Independent Claims 25 and 26 are directed to a method and a system for distributing a clock signal over an integrated circuit, respectively. For example, amended independent Claim 25 recites, in part:

independently generating a plurality of clock signals on the integrated circuit such that respective ones of the plurality of clock signals are distributed to respective portions of the integrated circuit; and

synchronizing phases of the plurality of clock signals to one another based on error signals that are generated based on relative phase differences between ones of the plurality of clock signals. (Emphasis added).

Claim 26 includes similar recitations. Thus, according to independent Claims 25 and 26, error signals are used in synchronizing the phases of the clock signals and these error signals

are generated based on the relative phase differences between the clock signals.

In sharp contrast to the recitations of independent Claims 25 and 26, Rolston describes a method and apparatus for distributing a clock in which nodes N1, N2, N3,..., N8 use two pulse trains CW and CCW to synchronize generation of the clock signals c1, c2, c3,..., and c8. (Rolston, FIG. 1). The clock synchronization approach used in Rolston is summarized in paragraph 41 as follows:

If the clocking system is properly synchronized, with the same propagation time between the respective detection points of any pair of adjacent nodes, and the pulse rate is properly adjusted, pairs of counter-propagating pulses CW and CCW will pass each other at all of the nodes simultaneously and all of the slave nodes N2...N8 will generate clock signal events simultaneously. If the two pulses do not arrive at the detection point of a particular slave node coincidentally, i.e., with substantially no phase difference, the slave node adjusts the propagation delay in the propagation paths adjacent that node to reduce the phase difference between subsequent pairs of pulses.

Thus, in contrast to the recitations of amended independent Claims 25 and 26 in which the phases of clock signals are synchronized to one another based on error signals that are generated based on the relative phase differences between the clock signals, Rolston describes synchronizing clock signals based on the phase difference between a pair of counter-propagating pulses CW and CCW, which are separate from the clock signals.

Accordingly, for at least the foregoing reasons, Applicants respectfully submit that independent Claims 25 and 26 are patentable over Rolston.

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CONCLUSION

In light of the above amendments and remarks, Applicants respectfully submit that the above-entitled application is now in condition for allowance. Favorable reconsideration of this application, as amended, is respectfully requested. If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned attorney at (919) 854-1400.

Respectfully submitted,

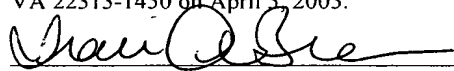


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